

## Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3

### PROJECT CONNECTION

<b>Title:</b>	Career Research Report
<b>Program Area:</b>	Technology Education
<b>Course Title :</b>	Drafting/Illustrative Design I
<b>Timeline for Use:</b>	14 <sup>th</sup> Week – Block Schedule
<b>Grade Level:</b>	9-12 Grade
<b>Duration of Project:</b>	7 Hours
<b>Submitted By:</b>	M. Van Deventer & R. King

### Lesson Summary

The career research report lesson is designed to provide an opportunity for Drafting/Illustrative Design I students to explore the real world of career possibilities. Students will be learning and utilizing numerous skills, such as research on the Internet furthering their computer technology knowledge, analyzing numbers and data, processing information and enhancing their reading/writing communication skills.

### Instructional Focus

**Lesson Topic:** Career Research Report  
**Language Arts Strand:** Reading, Writing, Speaking  
**Math Strand:** Data Analysis and Probability, Number Sense  
**Science Strand:** Nature of Science

### Rigor/Relevance Framework

<b>K N O W L E D G E</b>	<b>T A X O N O M Y</b>	<b>Evaluation</b>	<b>6</b>	<table><tr><td colspan="2"><b>C</b> Assimilation</td><td colspan="3"><b>D</b> <b>Adaptation</b></td></tr><tr><td colspan="2"><b>A</b> Acquisition</td><td colspan="3"><b>B</b> Application</td></tr><tr><td><b>1</b></td><td><b>2</b></td><td><b>3</b></td><td><b>4</b></td><td><b>5</b></td></tr><tr><td><b>Knowledge in one discipline</b></td><td><b>Apply in discipline</b></td><td><b>Apply across disciplines</b></td><td><b>Apply to real world predictable situations</b></td><td><b>Apply to real world unpredictable situations</b></td></tr></table>					<b>C</b> Assimilation		<b>D</b> <b>Adaptation</b>			<b>A</b> Acquisition		<b>B</b> Application			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Knowledge in one discipline</b>	<b>Apply in discipline</b>	<b>Apply across disciplines</b>	<b>Apply to real world predictable situations</b>	<b>Apply to real world unpredictable situations</b>
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		<b>Knowledge in one discipline</b>	<b>Apply in discipline</b>						<b>Apply across disciplines</b>	<b>Apply to real world predictable situations</b>	<b>Apply to real world unpredictable situations</b>																	
		<b>Synthesis</b>	<b>5</b>																									
<b>Analysis</b>	<b>4</b>																											
<b>Application</b>	<b>3</b>																											
<b>Comprehension</b>	<b>2</b>																											
<b>Awareness</b>	<b>1</b>																											

**PROJECT CONNECTION (continued)****Drafting/Illustrative Design Technology I****8600810****Project Three Student Performance Standards****Outcome # 02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY.**

**Performance Task# 02.04** Identify the criteria and constraints of a product or system and determine how they affect the final design and development.

**Outcome # 10.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.**

**Performance Task# 10.05** Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.

**Outcome # 11.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.**

**Performance Task# 11.02** Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and environment.

**Total SPS Addressed:****3**

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## PREREADING CONNECTION

<b>Title:</b>	Vocabulary Words
<b>Performance Tasks:</b>	02.04
<b>Sunshine State Standards (LA, MA, and SC):</b>	LA.A.1.4.1; LA.A.1.4.3
<b>Essential Skills (e, m, and s):</b>	e09; e30; e50; e52
<b>Rigor and Relevance (quadrant):</b>	A – Acquisition
<b>Instructions to Teacher:</b> The students will search for the definitions for the vocabulary words listed in the activity box below. They will direct their search through the Internet and use links such as <a href="http://www.dictionary.com">www.dictionary.com</a> or equivalent. See attachment for words with definitions.	
<b>Instructions to Students:</b> Search on the Internet using web site(s) that your teacher provides for you and give the definition for each of the words on the vocabulary handout. Then write a sentence for each word using it correctly.	
<b>Instructions for Learning Styles Modifications:</b> For those students who are more challenged, reduce the number of words on the vocabulary list or give them additional time to complete the assignment.	
<b>Assessment for Activity:</b> Record completion of definitions and sentences.	
<b>Approximate Length of Time for Activity:</b> 30 – 45 minutes	
<b>Materials needed:</b> Worksheet, computer with Internet service, printer	
<b>Activity:</b>  <div> <div>ethics</div> <div>analyze</div> <div>management</div> <div>résumé</div> <div>occupation</div> </div> <div> <div>entrepreneur</div> <div>bachelor's degree</div> <div>perceive</div> <div>compatible</div> </div>	

## PREREADING CONNECTION (continued)

### Vocabulary Words

**Ethics** – A set of principles of right conduct.

**Analyze** – To examine methodically by separating into parts and studying their interrelation.

**Management** – The conducting or supervising of something (as a business).

**Résumé** – A brief account of one's professional or work experience and qualifications, often submitted with an employment application.

**Occupation** – An activity that serves as one's regular source of livelihood; a vocation.

**Entrepreneur** – A person who organizes, operates, and assumes the risk for a business venture.

**Bachelor's degree** – An academic degree conferred by a college or university upon those who complete the undergraduate curriculum.

**Perceive** – To become aware of directly through any of the senses, especially sight or hearing.

**Compatible** – Capable of existing or performing in harmonious, agreeable, or congenial combination with another or others.

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## READING CONNECTION

<b>Title:</b>	Career Planning Connection
<b>Performance Tasks:</b>	10.05
<b>Sunshine State Standards (LA, MA, and SC):</b>	LA.A2.4.1; LA.A 2.4.7
<b>Essential Skills (e, m, and s):</b>	e15; e03
<b>Rigor and Relevance (quadrant):</b>	B – Application
<b>Instructions to Teacher:</b> The students will use the computer and go to the web site at <a href="http://www.career-connection.org">www.career-connection.org</a> and follow the directions provided below.	
<b>Instructions to Students:</b> Read and follow the instructions in “Activity” below.	
<b>Instructions for Learning Styles Modifications:</b>	
<b>Assessment for Activity:</b> Record completion of career connection assessment.	
<b>Approximate Length of Time for Activity:</b> 30 – 45 minutes	
<b>Materials needed:</b> Computer with Internet service, printer	
<b>Activity:</b> <ol style="list-style-type: none"> <li>1. Go to <a href="http://www.career-connection.org">www.career-connection.org</a></li> <li>2. Click on “Students”</li> <li>3. Click on “Student Career Center”</li> <li>4. Click on Step 1-assessments</li> <li>5. Click on “Personality Styles Inventory”</li> <li>6. Click on “Take The Career Key,” type in your name</li> <li>7. Check boxes for jobs that you think that you would like, then click continue</li> <li>8. Answer the questions on “what do you like to do?”, then continue</li> <li>9. Answer questions on “what are your abilities?”, then continue</li> <li>10. Answer questions on “how do you see yourself?”, then continue</li> <li>11. Answer questions on “what do you value?”, then continue</li> <li>12. Click on “next” after reading about the results of your career key test scores</li> <li>13. Click on “next” again after reading about the six types of occupation groups</li> <li>14. Click on the two highest scores on your career key test, then click on the jobs that you think interest you</li> <li>15. Click done</li> <li>16. Click on the job name or names that you would like to research and learn more about</li> <li>17. Print-out the job information</li> <li>18. This assignment is complete, now move on to the “Research Activity”</li> </ol>	

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## RESEARCH CONNECTION

<b>Title:</b>	Career Research
<b>Performance Tasks:</b>	10.05
<b>Sunshine State Standards (LA, MA, and SC):</b>	LA.A 2.4.1; LA.A 2.4.2; LA.A 2.4.4
<b>Essential Skills (e, m, and s):</b>	e03; e15; e24; e77
<b>Rigor and Relevance (quadrant):</b>	B – Application
<b>Instructions to Teacher:</b> See attached handout for “Career Research Report.” The front of the handout covers all of the report requirements in detail and the back (page 2) of the handout explains what to write about.	
<b>Instructions to Students:</b> See “Career Research Report” handout.	
<b>Instructions for Learning Styles Modifications:</b>	
<b>Assessment for Activity:</b>	
<b>Approximate Length of Time for Activity:</b> 90 minutes	
<b>Materials needed:</b> Handout, computer with Internet service, printer	
<b>Activity:</b> 1 See the “Career Research Report” handout and begin reading about the two careers that were printed out in the “Reading Activity.” 2. Highlight the information on both jobs that you would like to use in your report. 3. If you would like to research more career job opportunities, go to <a href="http://www.bls.gov/oco">www.bls.gov/oco</a> and identify the job cluster of your choice. 4. After completing the research and the highlighting on two different careers it’s time to move on to the “Writing Activity.”	

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**RESEARCH CONNECTION (continued)****Career Research Report****Class: Drafting / Illustrative Design I**

The assignment is to compare two different careers and point out the similarities and the differences that you learn about in your research. Think about where the careers are the same and write about them. Then think about the differences and write about them. Some career choices may possibly have more differences than similarities.

In conclusion, write about some of the things that you like about one, or both of the careers and explain why. This is an excellent place to write about any plans that you have already made, or are planning to make in preparation for life after high school.

***These are the requirements for the career report:***

You choose the careers that you are going to research and report on, and one of the careers must require drafting skills, not just drawing. For example, reading blueprints to perform your job is using a drafting skill.

The report is to be a minimum of 750 words in length.

The report must be typed using 12-point type and double-spaced for easy reading.

The report will begin with a title page that will include:

1. the name of the careers you have chosen
2. your name
3. the block (period) you are in
4. the date

The report will have a bibliography or references page as the last page of the report.

Correct spelling (use spell check on the computer), and use proper sentence structure throughout the report.

There will be ***Absolutely NO Plagiarism used in this report.*** Write the report using only your words. **This is strictly adhered to.** If you plagiarize, you will receive a zero on the report.

Report Due Date Is: \_\_\_\_\_

## **RESEARCH CONNECTION (continued)**

### **How To Write Your Report**

1. Start by writing two paragraphs providing a general description of the two careers that you have selected for your report.
2. Write one or two paragraphs describing the similarities between the two careers, such as education, hours worked per week, working conditions, possible travel, salary, outdoor or indoor work, the way you would need to dress, benefits like health insurance, paid vacation, furnished vehicle, etc.
3. Write one or two paragraphs describing the differences between the two careers.
4. Now write a conclusion paragraph that summarizes the important points about the two careers, what you like or dislike, and share any thoughts or plans you may be considering now that you have a better understanding about two more career opportunities.



## Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3

## WRITING CONNECTION

<b>Title:</b>	Written Career Report
<b>Performance Tasks:</b>	10.05
<b>Sunshine State Standards (LA, MA, and SC):</b>	LA.B 2.4.1
<b>Essential Skills (e, m, and s):</b>	e03; e15
<b>Rigor and Relevance (quadrant):</b>	D – Adaptation
<b>Instructions to Teacher:</b> The students should follow the report organization that is detailed on Page 2 of the “Career Research Report” handout. *The writing activity can also be assigned as homework.	
<b>Instructions to Students:</b> Follow the organizational layout that is explained in detail on Page 2 of the “Career Research Report” handout.	
<b>Instructions for Learning Styles Modifications:</b>	
<b>Assessment for Activity:</b> Use attached Research Report rubric to assist you in assigning a grade.	
<b>Approximate Length of Time for Activity:</b> 2 hours	
<b>Materials needed:</b> Computer, printer	
<b>Activity:</b> <ol style="list-style-type: none"> <li>1. Start a rough draft by using the highlighted information on your two careers, and begin to merge and rewrite the information using your own words.</li> <li>2. Compare and write about the similarities between the two jobs.</li> <li>3. Now compare and write about the differences between the two jobs.</li> <li>4. To finish, summarize some of the important content ideas and add some of your personal thoughts or future plans in regards to a career.</li> </ol>	

**Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3**
**WRITING CONNECTION (continued)**

<b>Research Report : Career Research Report</b>	<b>Total Pts. ____/30 possible</b>
<b>Teacher Name:</b>	
<b>Student Name:</b>	

CATEGORY	6	5	4	3
<b>Quality of Information</b>	Information clearly relates to the main topic. It includes several supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.
<b>Mechanics</b>	No grammatical, spelling or punctuation errors.	Almost no grammatical, spelling or punctuation errors	A few grammatical spelling, or punctuation errors.	Many grammatical, spelling, or punctuation errors.
<b>Paragraph Construction</b>	All paragraphs include introductory sentence, explanations or details, and concluding sentence.	Most paragraphs include introductory sentence, explanations or details, and concluding sentence.	Paragraphs included related information but were typically not constructed well.	Paragraphing structure was not clear and sentences were not typically related within the paragraphs.
<b>Internet Use</b>	Successfully uses suggested internet links to find information and navigates within these sites easily without assistance.	Usually able to use suggested internet links to find information and navigates within these sites easily without assistance.	Occasionally able to use suggested internet links to find information and navigates within these sites easily without assistance.	Needs assistance or supervision to use suggested internet links and/or to navigate within these sites.
<b>Tech. Time-line</b>	Diagrams, descriptions and illustrations are neat, accurate and add to the reader's understanding of the topic.	Diagrams, descriptions and illustrations are accurate and add to the reader's understanding of the topic.	Diagrams, descriptions and illustrations are neat and accurate and sometimes add to the reader's understanding of the topic.	Diagrams, descriptions and illustrations are not accurate OR do not add to the reader's understanding of the topic.

## Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3

## MATH CONNECTION

<b>Title:</b>	Compensation Package Worksheet
<b>Performance Tasks:</b>	10.05
<b>Sunshine State Standards (LA, MA, and SC):</b>	MA.A 5.4.1; MA.E 3.4.1
<b>Essential Skills (e, m, and s):</b>	m48; m05
<b>Rigor and Relevance (quadrant):</b>	B – Application
<b>Instructions to Teacher:</b> See the Math Activity worksheet and explain to the students that there is much more to an employee's total compensation than just an hourly rate or salary each week. For example: health insurance benefits, life insurance, paid vacation, furnished vehicle including insurance, and clothing allowance.	
<b>Instructions to Students:</b> See the Math Activity worksheet and calculate the total annual compensation for each of the career packages.	
<b>Instructions for Learning Styles Modifications:</b>	
<b>Assessment for Activity:</b> Record completion of worksheet.	
<b>Approximate Length of Time for Activity:</b> 30 minutes	
<b>Materials Needed:</b> Math Activity worksheet, calculator	
<b>Activity:</b> <ol style="list-style-type: none"> <li>1. Read over the known values located at the top of the worksheet.</li> <li>2. Apply the values that have been specified for each of the compensation packages.</li> <li>3. When completed, hand in for grading.</li> </ol>	

**MATH CONNECTION (continued)****Math Activity Worksheet**

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**Known values based on averages:**

Health ins. - \$3,000.00 single, \$7,000.00 couple, \$10,000.00 family  
Life ins. - \$300.00  
Dental ins. - \$300.00 single, \$500.00 couple, \$600.00 family  
Vision ins. - \$80.00 single, \$225.00 family  
Paid vacation – one weeks pay, two weeks pay, three weeks pay  
Furnished company vehicle (includes car insurance) - \$5,500.00  
Clothing/cleaning allowance - \$1200.00

**Compensation Package #1**

Hourly rate - \$10.00                      Total compensation \_\_\_\_\_  
\* Average working hours per week is 40 and average working hours per year is 2080.

**Compensation Package #2**

Salary - \$20,000.00  
Health ins. - \$3000.00  
Vacation – one weeks pay  
Cloth/Cleaning Allowance - \$1200.00              Total compensation \_\_\_\_\_

**Compensation Package #3**

Hourly rate - \$15.00  
Health ins. - \$2500.00  
Dental ins. - \$300.00  
Vision ins. - \$80.00  
Vacation – two weeks pay                      Total compensation \_\_\_\_\_

**Compensation Package #4**

Salary - \$42,500.00  
Health ins. - \$7,600.00  
Dental ins. - \$500.00  
Vision ins. - \$225.00  
Life ins. - \$300.00  
Vacation – three weeks pay  
Vehicle - \$5,500.00                      Total compensation \_\_\_\_\_

## Technology Ed./Introduction to Technology/Project 1

## SCIENCE CONNECTION

<b>Title:</b>	Technology Timeline
<b>Performance Tasks:</b>	11.02
<b>Sunshine State Standards (LA, MA, and SC):</b>	SC.H.3.4.2; SC.H.3.4.3; SC.H.3.4.5; SC.H.3.4.6
<b>Essential Skills (e, m, and s):</b>	
<b>Rigor and Relevance (quadrant):</b>	B – Application
<b>Instructions to Teacher:</b> The students will create a time-line for one of their career choices. They need to give some thought to the tools, inventions, materials or processes that have become standards in the career of their choice over the last 50 to 100 years. Then they need to research those by name and determine facts such as names, dates and places. Then they need to create a time-line chart or graph showing those facts for each technological advancement in their career.	
<b>Instructions to Students:</b> Read and follow the “Time-line Activity” instructions below.	
<b>Instructions for Learning Styles Modifications:</b>	
<b>Assessment for Activity:</b> Record completed Time-line.	
<b>Approximate Length of Time for Activity:</b> 90 minutes	
<b>Materials needed:</b> Computer with Internet service, printer	
<b>Activity:</b> <ol style="list-style-type: none"> <li>1. Pick only one of the careers that you chose to report on and think about the tools that were invented over the years that would be used by someone who has worked in the same career as the one that you reported on.</li> <li>2. Think in general terms about tools that have been invented that may still be in use today or have been replaced by newer more modern tools. The meaning of the word tool includes inventions as well as tools, new materials that have been created, new processes that have been discovered and so on.</li> <li>3. If possible, it would be a good idea to get help on this from someone in your family or possibly a person in your community related to your career choice. They will have many ideas to share with you, so take advantage of this opportunity and benefit from their knowledge.</li> <li>4. Write down the names and then start your search on the computer. For example: type in- “history of the computer.” Some web sites that you can use for this activity are <a href="http://www.Yahoo.com">www.Yahoo.com</a>, <a href="http://www.MSN.com">www.MSN.com</a>, etc.</li> <li>5. Now that you have collected some facts (dates, places, names of people) on each of the items that you were looking for, arrange this information on a time-line.</li> <li>6. A time-line is just a horizontal line with a vertical mark indicating today (2004) on the right end, then work backwards and make a vertical mark on the line wherever you have some factual information to add about a technological advance that occurred at that point in time.</li> <li>7. Be careful to only report on the technological advances that have directly impacted the career that you have chosen to report on.</li> </ol>	

## Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3

### CROSSWALKS

**Outcome # 02.0 DEMONSTRATE AN UNDERSTANDING OF THE CORE CONCEPTS OF TECHNOLOGY.**

**Performance Task# 02.04 Identify the criteria and constraints of a product or system and determine how they affect the final design and development.**

SSS Strand: Number Sense, Concepts and Operations			Essential Work Skills	
MA.A 5.4.1	M	Applies special number relationships such as sequences and series to real-world problems.	m48	Understand the concepts and apply the uses of functions and limits (i.e., conduct limiting processes using functions to investigate infinite series and sequences).
SSS Strand: Measurement			Essential Work Skills	
MA.B 1.4.1	H	Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three- dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.	m13	Compute the perimeter and area of two-dimensional figures.
			m17	Compute the volume of three-dimensional figures (solids).
MA.B 1.4.2	H	Uses concrete and graphic models to derive formulas for finding rate, distance, time, angle measures and arc lengths.	m14	Understand the angle relationships in triangles (i.e., acute, obtuse, right, interior, and exterior).
			m30	Know how to measure circle quantities (e.g., area, angle formed by two secants, circumference, length of segments, etc.)
MA.B 1.4.3	H	Relates the concepts of measurement to similarity and proportionality in real-world situations.	m52	Find the solution of proportions with monomial and binomial terms (e.g., $x/(x-2) = 6/5$ , therefore, $x = 12$ ).
MA.B 3.4.1	H	Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.	m33	Use the technique of dimensional analysis to convert units of measure (e.g., convert km/hr to m/min) including drawing to scale and applying ratios. Understand and use various techniques for estimating, making and converting measure; and using these to perform dimensional analysis.
MA.B 4.4.1	L	Determines the level of accuracy and precision, including absolute and relative errors or tolerance, required in real-world measurement situations.	No Essential Work Skill	
MA.B 4.4.2	L	Selects and uses appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.	No Essential Work Skill	
SSS Strand: Data Analysis and Probability			Essential Work Skills	
MA.E 3.4.1	H	Designs and performs real-world statistical experiments that involve more than one variable, then analyzes results and reports findings.	m05	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
MA.E 3.4.2	H	Explains the limitations of using statistical techniques and data in making inferences and valid arguments.	m36	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
			m42	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
SSS Strand: Forces and Motion			Essential Work Skills	

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### CROSSWALKS (continued)

**SC.C 2.4.6 M** Explains that all forces come in pairs commonly called action and reaction.

**s84** Understand and apply statics (i.e., the relation between forces acting on an object at rest) and dynamics (i.e., the relation between the forces acting on an object and the resulting motion).

#### Outcome # 10.0 DEMONSTRATE THE ABILITIES TO USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS.

**Performance Task# 10.05 Use computers and calculators to access, retrieve, organize, process, maintain, interpret, and evaluate data and information in order to communicate.**

SSS Strand: Reading			Essential Work Skills	
<b>LA.A 2.4.1 H</b>	Determines the main idea and identifies relevant details, methods of development, and their effectiveness in a variety of types of written material.		<b>e15</b>	Discriminate important ideas from unimportant ideas while reading.
			<b>e24</b>	Summarize, synthesize and organize information while reading.
			<b>e46</b>	Apply, extend, and expand on information while reading.
<b>LA.A 2.4.2 H</b>	Determines the author's purpose and point of view and their effects on the text.		<b>e77</b>	Assess the significance and importance of the themes in a literary text.
<b>LA.A 2.4.4 H</b>	Locates, gathers, analyzes, and evaluates written information for a variety of purposes, including research projects, real-world tasks, and self-improvement.		<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>LA.A 2.4.5 H</b>	Identifies devices of persuasion and methods of appeal and their effectiveness.		<b>e17</b>	Analyze, evaluate and critique such events as current events, political campaigns, advertisements and media.
			<b>e72</b>	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
<b>LA.A 2.4.6 L</b>	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.		<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>LA.A 2.4.7 H</b>	Analyzes the validity and reliability of primary source information and uses the information appropriately.		<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
<b>LA.A 2.4.8 H</b>	Synthesizes information from multiple sources to draw conclusions.		<b>e03</b>	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
SSS Strand: Data Analysis and Probability			Essential Work Skills	
<b>MA.E 1.4.1 H</b>	Interprets data that has been collected, organized, and displayed in charts, tables, and plots.		<b>m05</b>	Understand the best procedures for statistical data collection, organization, and display including making estimates and predictions and drawing inferences.
			<b>m36</b>	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).



## Technology Ed./Drafting-Illustrative Design Tech. 1/Project 3

### CROSSWALKS (continued)

MA.E 1.4.2	H	Calculates measures of central tendency (mean, median, and mode) and dispersion (range, standard deviation, and variance) for complex sets of data and determines the most meaningful measure to describe the data.	m42	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
			m36	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
MA.E 1.4.3	H	Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.	m42	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).
			m36	Understand the characteristics of measures of dispersion (i.e., range, mean deviation, variance, and standard deviation).
			m42	Understand the concepts and applications of quartiles (i.e., distributing groups into four equal frequencies) and percentiles (i. e., distributing individuals into one hundred groups of equal frequency).

### Outcome # 11.0 DEMONSTRATE THE ABILITIES TO ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS.

**Performance Task# 11.02 Synthesize data, analyze trends, and draw conclusions regarding the effect of technology on the individual, society, and environment.**

SSS Strand: Reading			Essential Work Skills	
LA.A 2.4.1	H	Determines the main idea and identifies relevant details, methods of development, and their effectiveness in a variety of types of written material.	e15	Discriminate important ideas from unimportant ideas while reading.
			e24	Summarize, synthesize and organize information while reading.
			e46	Apply, extend, and expand on information while reading.
LA.A 2.4.2	H	Determines the author's purpose and point of view and their effects on the text.	e77	Assess the significance and importance of the themes in a literary text.
LA.A 2.4.5	H	Identifies devices of persuasion and methods of appeal and their effectiveness.	e17	Analyze, evaluate and critique such events as current events, political campaigns, advertisements and media.
			e72	Evaluate the way an author uses language and text characteristics such as plot, setting, theme, character, point of view, genre etc. to evoke a response in a reader.
LA.A 2.4.6	L	Selects and uses appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.	e03	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
LA.A 2.4.7	H	Analyzes the validity and reliability of primary source information and uses the information appropriately.	e03	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.
LA.A 2.4.8	H	Synthesizes information from multiple sources to draw conclusions.	e03	Gather information from a variety of sources, including electronic sources, and summarize, analyze, and evaluate its use for a report.



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## CROSSWALKS (continued)

SSS Strand: How Living Things Interact with Their Environment			Essential Work Skills	
SC.G 1.4.1	H	Knows of the great diversity and interdependence of living things.	s13	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
SC.G 1.4.2	H	Understands how the flow of energy through an ecosystem made up of producers, consumers, and decomposers carries out the processes of life and that some energy dissipates as heat and is not recycled.	s13	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
SC.G 1.4.3	M	Knows that the chemical elements that make up the molecules of living things are combined and recombined in different ways.	s99	Understand and apply organic reactions involving substitution, addition, fermentation, oxidation, polymerization, etc.
SC.G 2.4.1	M	Knows that layers of energy-rich organic materials have been gradually turned into great coal beds and oil pools (fossil fuels) by the pressure of the overlying earth and that humans burn fossil fuels to release the stored energy as heat and carbon dioxide.	s71	Analyze the properties of the earth's crust and interior (i.e., solid and liquid zones, crustal thickness, crustal composition, density, temperature and pressure, and interior composition).
			s89	Identify the factors affecting the deposition of particles (e.g., size, shape, density, and velocity) and analyze the sorting of sediments in a system.
SC.G 2.4.2	H	Knows that changes in a component of an ecosystem will have unpredictable effects on the entire system but that the components of the system tend to react in a way that will restore the ecosystem to its original condition.	s13	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
SC.G 2.4.3	M	Understands how genetic variation of offspring contributes to population control in an environment and that natural selection ensures that those who are best adapted to their surroundings survive to reproduce.	s13	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
			s44	Examine evolution as it relates to theories concerning the origin of life and natural selection.
SC.G 2.4.4	H	Knows that the world ecosystems are shaped by physical factors that limit their productivity.	s13	Understand ecology as the study of the interactions and relationships of organisms with their living and nonliving environments (i.e., the ecosystem, communities, and populations).
SC.G 2.4.5	H	Understands that the amount of life any environment can support is limited and that human activities can change the flow of energy and reduce the fertility of the Earth.	s10	Understand the human impact on the environment through pollution (air, water, and soil), and ways to improve it through education, research, laws, and conservation.
SC.G 2.4.6	M	Knows the ways in which humans today are placing their environmental support systems at risk (e.g., rapid human population growth, environmental degradation, and resource depletion).	s40	Know the survival requirements of animals and plants and the history and implications of population growth.
SSS Strand: The Nature of Science			Essential Work Skills	
SC.H 1.4.1	H	Knows that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	s114	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures.)
SC.H 1.4.2	M	Knows that from time to time, major shifts occur in the scientific view of how the world works, but that more often the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.	s116	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.

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CROSSWALKS (continued)

SC.H 1.4.3	M	Understands that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.	s114	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures.)
SC.H 1.4.4	M	Knows that scientists in any one research group tend to see things alike and that therefore scientific teams are expected to seek out the possible sources of bias in the design of their investigations and in their data analysis.	s114	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures.)
SC.H 1.4.5	M	Understands that new ideas in science are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and usually grow slowly from many contributors.	s116	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
SC.H 1.4.6	M	Understands that in the short run, new ideas that do not mesh well with mainstream ideas in science often encounter vigorous criticism and that in the long run, theories are judged by how they fit with other theories, the range of observations they explain, how well they explain observations, and how effective they are in predicting new findings.	s116	(Not Ranked) Understand the impact upon society and the environment of scientific and technological discoveries and the contributions of scientists. Understand how society may accept or reject scientific discoveries based upon need or refusal to change.
SC.H 1.4.7	M	Understands the importance of a sense of responsibility, a commitment to peer review, truthful reporting of the methods and outcomes of investigations, and making the public aware of the findings.	s114	(Not Ranked) Know and apply the principles of scientific inquiry. (Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures.)

Total Number of Student Performance Standards being addressed in this project

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